

## **REMARKS**

Claims 30-33, 35, 37, and 39-47 are now pending in the application. Claims 30-33, 35 and 37-47 are rejected. Claims 30, 37, and 47 have been amended. No new matter has been added. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the remarks contained herein.

### **I. REJECTIONS UNDER 35 U.S.C. § 112**

#### **A. Rejection of claim 47 under 35 U.S.C. § 112, first paragraph**

Claim 47 is rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the enablement requirement. Applicant respectfully requests reconsideration and withdrawal of this rejection.

The Examiner alleges that the specification does not provide any inventive steps for the formulation of decision models. The Examiner also states, "the specification does not have an example that shows how buy/sell model is created to allow an ordinary skill in the art to repeat and use the model." The Examiner further states that the illustration of a decision model on page 17-18 of the specification is "nothing but a well known programming model which has been in use by the prior art as is detailed in the following rejections (see CyberCorp)."

Applicant respectfully asserts that the Examiner is wrong in stating that the specification does not have an example that shows how a buy/sell decision model is created that would allow a person skilled in the art to make and use the invention. The Examiner is also wrong in asserting that an inventive step is required in the development of the decision model. Interestingly, the Examiner's reference to the

illustrations on pages 17-18 of the specification as representing the prior art contradicts the Examiner's own contention that a person of ordinary skill in the art would not be able to make and use the invention.

The specification does provide detailed discussion regarding development of decision models and includes several examples and illustrations. Starting at paragraph [0047]<sup>1</sup> through paragraph [0069] of the specification, detailed information is provided regarding construction of a decision model that would easily allow a person skilled in the art to replicate the process. Following the description of development of the decision model, detailed discussion focuses on how data is entered into component equations of the decision model (see paragraph [0079]) and how the results of the decision model result in a decision to buy or sell a security. (See paragraphs [0080] to [0082]).

Further, detailed examples of a decision model are in the specification starting at paragraph [0085] to paragraph [0095]. This discussion centers around differing options for development of a decision model. One of the examples includes the following mathematical expression:

If  $f(\text{Comp\_1}) \geq f(\text{Comp\_2})$  then Level 2 is TRUE (see paragraph [0090]).

It is explained in the specification that in this example the functions of Comp\_1 and Comp\_2 are compared where Comp\_1 and Comp\_2 can be moving averages of data for a security or market. (See paragraph [0091]).

Further, Fig. 3 illustrates development of a decision model and Fig. 6 provides a flowchart example of how a decision model functions.

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<sup>1</sup> Reference is made to a substitute specification that was filed with the USPTO on or around April 29, 2003. This substitute specification contains paragraph numbering.

Therefore, there is more than ample disclosure and discussion regarding the formulation of decision models, in full, clear, and concise and exact terms as to enable a person skilled in the art to make and use the invention.

The Examiner does not explain, nor does the Examiner provide any authority for the assertion that the specification does not provide an inventive step for the formulation of a decision model. 35 U.S.C. § 112 does not require "any inventive steps" for a claim to meet the enablement requirements.

As explained by the Federal Circuit:

"Requiring inclusion in the patent of known scientific/technological information would add an imprecise and open-ended criterion to the content of patent specifications, could greatly enlarge the content of patent specifications and unnecessarily increase the cost of preparing and prosecuting patent applications, and could tend to obfuscate rather than highlight the contribution to which the patent is directed. A patent is not a scientific treatise, but a document that presumes a readership skilled in the field of the invention." Ajinmoto Co., Inc. v. Archer-Daniels-Midland Co., 228 F.3d 1338, 56 USPQ2d 1332, 1336 (Fed. Cir. 2000), *cert. denied* 532 U.S. 1019 (2001).

Therefore, the Examiner has failed to establish a *prima facie* case of lack of enablement pursuant to 35 U.S.C. § 112, first paragraph.

Further, there is no requirement for a patent claim to be enabled, it must enable all embodiments of the invention. On the contrary, the CCPA and Federal Circuit both recognize that a claim need not enable all embodiments of the invention. See Spectra-Physics, Inc. v. Coherent, Inc., 827 F.2d 1524, 3 USPQ2d 1737, 1743 (Fed. Cir. 1987), *cert. denied* 484 U.S. 954 (1987).

In addition, the Federal Circuit has held that computer and software related inventions require a lower threshold for enablement. According to the Federal Circuit, a

specification directed to a computer related invention can sufficiently describe how to make and use the invention in broad terms:

"One skilled in the art would know how to program a microprocessor to perform the necessary steps described in the specification. Thus, an inventor is not required to describe every detail of his invention. An applicant's disclosure obligation varies according to the art to which the invention pertains. Disclosing a microprocessor capable of performing certain functions is sufficient to satisfy the requirement of § 112, first paragraph, when one skilled in the relevant art would understand what is intended and how to carry it out." In re. Hayes Microcomputer Prods, Inc. v Patent Litig., 982 F.2d 1527, 25 USPQ2d 1241 (Fed. Cir. 1992).

The Federal Circuit has also held that when the invention relates to a computer program, enablement is determined from the viewpoint of the skilled programmer. The Federal Circuit noted that the invention was not in the details of the program writing, but in the combination of the components functioning together. As explained by the Federal Circuit:

"In assessing any computer-related invention, it must be remembered that the programming is done in a computer language. The computer language is not a conjuration of some black art, it is simply a highly structured language . . . [T]he conversion of a complete thought (as expressed in English and mathematics, i.e. the known input, the desired output, the mathematical expressions needed and the methods of using those expressions) into a language a machine understands as necessarily a merely clerical function to a skilled programmer." Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 15 USPQ2d 1321 (Fed. Cir. 1990) *cert. denied* 489 U.S. 920 (1990).

Therefore, the written description of the invention in the specification is enabling and the rejection under 35 U.S.C. § 112, first paragraph, should be withdrawn.

**B. Rejection of claims 30-33 and 44-47 under 35 U.S.C. § 112, second paragraph**

Claims 30-33 and 44-47 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. The Examiner states that independent claims 30, 44 and

47 recite the limitation "mathematical function" which the Examiner alleges is indefinite and does not point to any particular mathematical function. Applicant respectfully requests reconsideration and withdrawal of this rejection.

The Examiner's statement that a "mathematical function" limitation is indefinite is contradicted by the Examiner's own research including citation to a definition for a mathematical function found by the Examiner online at the Wikipedia website ([www.wikipedia.org](http://www.wikipedia.org)). This description of a mathematical function<sup>2</sup> clearly shows that a person skilled in the art would understand the meaning of the term "mathematical function." Therefore, the Examiner fails to establish a *prima facie* case of indefiniteness pursuant to 35 U.S.C. § 112, second paragraph.

Further, as previously stated in Applicant's response to an Office Action mailed January 13, 2006, a quick research of issued patents shows that the term "mathematical function" can be found in the claims of several hundred allowed patents. This includes, for example, US 7,016,080, where in independent claims 21 and 36 of that patent, the term "mathematical function" is used without pointing out any particular mathematical function. The Examiner does not even attempt to explain how Applicant's use of the term "mathematical function" is different from what has been repeatedly acceptable to the USPTO.

Therefore, the term "mathematical function" is definite and is readily recognizable by a person skilled in the art. Therefore, the Examiner has failed to establish a *prima facie* case of indefiniteness and the rejection under 35 U.S.C. § 112, second paragraph, should be withdrawn.

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<sup>2</sup> Attached to the August 1, 2006 Office Action.

**C. Rejection of claims 44-47 under 35 U.S.C. § 112, second paragraph**

Claims 44-47 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. The Examiner states that independent claims 44 and 47 recite the limitation "mathematical expression" which the Examiner alleges to be indefinite since it does not point to any particular mathematical expression.

Similar to the term "mathematical function" the term "mathematical expression" is readily definable as the Examiner found in his own research, including citation to the Wikipedia website where the Examiner found a definition and discussion of the term "mathematical expression."<sup>3</sup> Therefore, the Examiner has failed to establish a *prima facie* case of indefiniteness pursuant to 35 U.S.C. § 112, second paragraph and the rejection should be withdrawn.

**D. Rejection of claims 30-33 and 44-47 under 35 U.S.C. § 112, second paragraph (metes and bounds of the invention)**

Claims 30-33 and 44-47 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. The Examiner alleges that the rejected claims do not recite any elements of a claimed mathematical function and mathematical expression and thus do not clearly set forth metes and bounds of the claimed process or method. The Examiner appears concerned that the mathematical formula could be any mathematical formula or function.

The Examiner's argument fails to establish a *prima facie* case of indefiniteness for at least two reasons. First, an object of the invention is to allow a security trader to develop and implement their own decision models that comprise a function of data for the security. Second, the mathematical function itself is not claimed to be a novel

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<sup>3</sup> Attached to the August 1, 2006 Office Action.

portion of the invention. It is the ability to develop and implement a user defined decision model comprising a mathematical function for automated buying and selling a security that is novel.

The purpose of the mathematical function is to receive inputted data and produce a value that is compared to a decision point. This is represented in each of the independent claims 30, 44 and 47. For example, claim 47 provides the following:

"Providing for selecting at least one decision model for automated and repeated buying and selling of a security through the automated trading system, wherein the decision model comprises a mathematical expression, wherein the mathematical expression comprises a mathematical function of data for at least one of the security, a market, and a market maker;

selecting at least one decision model;

inputting data into at least one of the selected decision models;

resolving the mathematical expression of at least one of the selected decision models; [on]

comparing the result of the mathematical expression of at least one of the selected decision models with a decision point wherein the comparison results in a decision comprising a decision to buy, a decision to sell, or no decision."

As a result, a decision can be made to buy a security, sell a security, or do nothing. Thus, the result of the mathematical function is always limited one of three decisions. In other words, the Examiner's concern that an improper function could be utilized such as a function in physics or fluid mechanics while possible, has little consequence to the invention. It would not impact the overall advantage of the invention given that the user will quickly recognize that successful trading would be better achieved by a function based on an analysis of data that anticipates a movement of a stock price and not fluid mechanics.

The most frequently used mathematical functions will be designed to follow principles related to "technical analysis" of security prices. This type of trading is described in the specification. "Technical analysis of stock prices tells us that prices tend to move in trends, volume of traded securities correspond with the trends, and the trend once has established has momentum and tends to continue in force." (See paragraph [0004]). The specification also indicates that the data that a day trader might monitor in order to determine a trend includes price, bids, asks, spread between the inside bid/ask, and the number of shares on the bid or ask side, and other information. Thus, this is the information that would be submitted into a mathematical function. Therefore, the metes and bounds of the invention as it relates to use of a function in the decision model has both practical and historical limits known to those skilled in the art.

Therefore, the Examiner has failed to establish a *prima facie* case of indefiniteness pursuant to 35 U.S.C. § 112, second paragraph, and the rejection should be withdrawn.

## II. REJECTIONS UNDER 35 U.S.C. § 103

### A. Rejection of claims 30 and 44-47 over Lupien in view of the CyberCorp reference

Claims 30 and 44-47 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Lupien et al. (U.S. 5,845,266) in view of "CyberTrader - Trader's Workstation - An Integrated Trading Environment" submitted with IDS (hereinafter Cybercorp). Applicant respectfully requests reconsideration and withdrawal of this rejections.



**1. The 1998 Version of the Cybercorp Reference is Not the Same as the 2000 Version of the Cybercorp Reference**

The Examiner cited a Cybercorp reference for the first time in a January 13, 2006 Office Action. This Cybercorp reference was submitted by the Applicant in an IDS on April 29, 2003. Each page of this reference has a footer with the date of February, 2000 and a version of 2.1 (hereinafter the "Cybercorp 2000 Reference").

In response to the Examiner's citation of the Cybercorp 2000 Reference in the January 13, 2006 Office Action, Applicant filed a Declaration pursuant to 37 C.F.R. § 1.131 establishing conception of the claimed invention prior to February 1, 2000, the earliest possible publication date of the Cybercorp 2000 Reference. The Examiner is now relying upon a different Cybercorp reference. The Examiner now relies upon the Cybercorp reference with a date in the footer of October, 1998 and a version number of 1.7 (hereinafter the "Cybercorp 1998 Reference").

The Cybercorp 2000 Reference is different from the Cybercorp 1998 Reference. The Examiner, however, appears to ignore clear and distinct differences between the references, choosing instead to treat them as the same. In fact, the Examiner refers to the Cybercorp 2000 Reference in support of the 35 U.S.C. § 103 rejections in the current Office Action notwithstanding the fact that the Applicant submitted a declaration effectively eliminating the Cybercorp 2000 Reference as prior art. The Cybercorp 2000 Reference and the Cybercorp 1998 Reference are different and the differences cannot be ignored.

For example, Chapter 14 of the Cybercorp 2000 Reference provides a discussion regarding automation used for inputting orders through a stop loss/conditional order entry window. The Cybercorp 1998 Reference does not provide similar discussion or a

stop loss/conditional order entry window. At best, the Cybercorp 1998 Reference only refers to providing alerts based on preconditions set by the user. For example, an alert screen is shown on page 32 of the Cybercorp 1998 Reference. There is, however, no teaching or suggestion in the Cybercorp 1998 Reference for performing any form of automated trading, specifically including the buying and selling of a security. Nor is there teaching or suggestion of allowing a user to develop a decision model that will be used to execute a trade.

In fact, the Cybercorp 1998 Reference suggests that it requires interaction of a trader to initiate a trade. For example, on page 7 of the Cybercorp 1998 Reference, it states that "CyberTrader and CyberT are an advanced integrated trading environment designed for professional day traders and brokers. They are designed to allow traders to buy or sell stock at the touch of a button." This is manifestly different from buying and selling securities based upon a predesigned and implemented decision model for a security.

Page 11 of the Cybercorp 1998 Reference also supports that trading is not automated by stating, "speed is the key in trading with CyberTrader, traders can see their market data in real time, touch the keyboard, send an order, and receive confirmation, all within seconds." Therefore, the Cybercorp 1998 Reference does not appear to allow for, and does not teach or suggest, the inputting of strings or programming code to initiate a trade as suggested by the Examiner.

Notwithstanding the differences between the Cybercorp 2000 Reference and the Cybercorp 1998 Reference, it is important to point out that neither reference supports automated trading, meaning an ability to buy and sell a security based on a decision

model. Further, neither reference supports development of a decision model comprising a function of security data such as proposed by the invention. Therefore, the Cybercorp 1998 Reference cannot be used in place of the Cybercorp 2000 Reference that was previously removed from consideration pursuant a Declaration of the Applicant.

**2. The Examiner Fails to Provide Support for what is Taught or Suggested by the Lupien Reference**

The Examiner relies heavily upon the Lupien reference and makes several statements regarding what the Lupien reference teaches or suggests. Applicant, however, has carefully reviewed the Lupien reference and cannot find support for most of the allegations made by the Examiner. The Examiner continues to cite the Lupien reference without providing specific support for what is purportedly taught or suggested by this reference, notwithstanding the fact that Applicant has repeatedly challenged the Examiner to provide this requested information. Instead, the Examiner has relied upon broad sections of the text of the Lupien reference without specifically stating what terminology is relied upon. As a result, Applicant is left in the dark and does not understand or agree with the purported teachings of Lupien as suggested by the Examiner.

For example, the Examiner alleges that Lupien discloses in response to monitoring a decision model automatically generating a sell transaction order for a security and automatically transmitting the sell transaction order to a market computer and then in response to monitoring said decision model, automatically generating a buy transaction order for the security and automatically transmitting the buy transaction order to a market computer. As has been repeatedly discussed in prior responses to

office actions, Lupien does not teach or suggest any of these steps. The Examiner fails to provide specific reference to what within the Lupien reference supports any of these steps including monitoring a decision model, automatically generating a transaction order or automatically transmitting the order to a market computer. If the Examiner intends to maintain this rejection, the Examiner is respectfully requested to provide specific support for each of these alleged steps. The Applicant has carefully reviewed the Lupien reference including all the sections cited by Examiner, but cannot find support for any of these steps.

**3. Lupien in View of the Cybercorp 1998 Reference Does Not Establish a *prima facie* Basis for Obviousness**

Regarding claims 44-46, the Examiner makes additional statement regarding what Lupien purportedly discloses. However, as stated above, a careful review of the Lupien reference including the sections cited by the Examiner, fails to disclose that Lupien teaches or suggests the elements required in claims 44-46. For example, what is the "computer implement transaction approval processor" in Lupien? What is the "decision monitor" in Lupien? Further, what is the "moving average portion of the decision model" in Lupien? In fact, the sections of Lupien cited by the Examiner fail to disclose any of these elements.

Further, the Examiner's own statements appear somewhat contradictory regarding what Lupien does and does not teach or suggest. For example, the Examiner first states that Lupien has an ability to monitor a decision model, but then states that "Lupien, does not explicitly discloses [sic] and at least one computer implemented decision model..." Applicant does not understand what the Examiner is attempting to do.

Regarding claim 47, the same analysis applies. The Examiner fails to provide any support for his assertions regarding what the Lupien reference teaches or suggests, when in fact the Lupien does not support statements made by the Examiner in the Office Action. Further, as already discussed, the Cybercorp 1998 Reference is different from the Cybercorp 2000 Reference, a fact that is ignored by the Examiner.

Therefore, the Examiner has not established a *prima facie* basis for rejection of the claims. Reconsideration and withdrawal of the rejection is requested.

**B. Rejection of claims 31-33 over Lupien and Cybercorp and further in view of Tertitski and Kane**

Claims 31-33 are rejected under 35 U.S.C 103(a) as allegedly being upatentable over Lupien and CyberCorp, as applied to claim 30 above, and further in view of Tertitski et al. (US 6,493,689) and Kane (US 6,317,728). The Applicant respectfully requests reconsideration and withdrawal of this rejection.

For all the reasons already discussed in this response and previous responses (incorporated herein by reference), Lupien does not teach or suggest elements of claims 31-33. The Examiner fails to provide a *prima facie* case of obviousness. Further, as previously discussed, the Cybercorp 1998 Reference does not teach or suggest the elements of claims 31-33.

Nor does Tertitski et al. support what is alleged by the Examiner to be its teachings or suggestions. Finally, neither does Kane support the teachings or suggestions as alleged by the Examiner. As the Examiner has done with Lupien, detail regarding what in the Tertitski or Kane references supports the assertions made by the Examiner is missing. The Examiner refers to several sections of Lupien and Kane but fails to provide a logical connection between the assertions made, and the disclosure

and teachings in Tertitski or Kane. Therefore, there is no *prima facie* basis for obviousness under 35 U.S.C. § 103(a). Applicant requests reconsideration and withdrawal of this rejection.

**C. Rejection of claim 35 over Lupien in view of CyberCorp, Kane and Buist**

Claim 35 is rejected under 35 U.S.C 103(a) as allegedly being upatentable over Lupien in view of CyberTrader (i.e., the Cybercorp 2000 Reference), Kane and Buist (US 6,408,282). The Applicant respectfully requests reconsideration and withdrawal of this rejection.

For all of the reasons previously discussed, the references cited by the Examiner fail to teach or suggest the elements of claim 35. Therefore, there is no *prima facie* basis for an obviousness type rejection. As the Examiner has done with each of the other references, the Examiner fails to provide a logical connection between what the Examiner asserts to be disclosed by the Buist reference and what in fact is taught or suggested by the reference. As previously done, the Examiner, refers to several sections of Buist without clearly showing how any of the sections relate to elements in the claims. Therefore, the Examiner has failed to establish a *prima facie* case for obviousness. Reconsideration and withdrawal of this rejection is requested.

**D. Rejection of claims 37-39 over Lupien in view of CyberCorp and Buist**

Claims 37-39 are rejected under 35 U.S.C 103(a) as allegedly being upatentable over Lupien in view of CyberTrader (i.e. the Cybercorp 2000 Reference) and Buist. The Applicant respectfully requests reconsideration and withdrawal of this rejection.

For all of the reasons previously discussed, the cited references do not teach or suggest the limitations of claims 37-39. The Examiner has failed to establish a *prima facie* basis for rejection under 35 U.S.C. § 103(a). Reconsideration and withdrawal of this rejection is requested.

**E. Rejection of claims 40-43 over Lupien, CyberCorp and Buist and further in view of Kane**

Claims 40-43 are rejected under 35 U.S.C 103(a) as allegedly being upatentable over Lupien, CyberTrader (i.e. the Cybercorp 2000 Reference) and Buist as applied to claim 37 above and further in view of Kane. The Applicant respectfully requests reconsideration and withdrawal of this rejection.

For all of the reasons previously discussed, the Examiner has failed to establish a *prima facie* basis for rejection of claims 40-43 under 35 U.S.C. § 103(a). Reconsideration and withdrawal of this rejection is requested.

For all of the above stated reasons, Applicant respectfully requests reconsideration and withdrawal of all rejections of all currently pending claims.

**CONCLUSION**

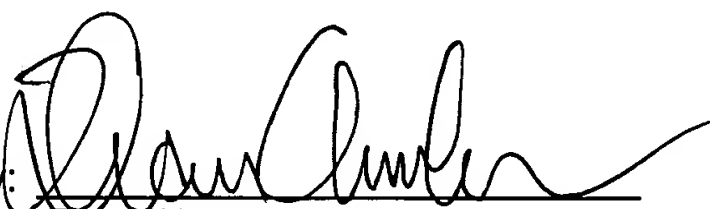
It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the

Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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2006 D.A.

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